Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, DC

In the Matter of:	)	
	)	
The Notice of Proposed Rulemaking to Amend	)	
	)	
Parts 2 and 97 of the Commission's Rules to	)	
	)	
Allocate Additional Frequencies in the LF and HF	)	ET Docket 02-98
	)	
Ranges to the Amateur Radio Service	)	
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Reply Comments to Mr. Douglas Dunn, Licensee of Amateur Radio Station K7YD, Livingston, Montana

1. Background and Introduction

I, Philip E. Galasso, have been a licensed radio amateur since September 27, 1968 and a holder of the Amateur Extra Class license since April 16, 1976, currently with the station callsign K2PG. I use most of the emission modes permitted on the amateur bands from 1800 kHz through 450 MHz. I have held the First Class Radiotelephone Operator License (now the General Radiotelephone Operator License) since 1973 and am employed as the chief operator of broadcast stations WHTG and WHTG-FM in Eatontown, New Jersey. I also hold a station license in the Experimental Radio Service with the callsign KA2XUK, for the purpose of exploring propagation on the 160-190 kHz band.

On June 19, 2002, Mr. Douglas Dunn ("Dunn") filed comments on ET Docket 02-98 pertaining to the Commission's proposal to amend Parts 2 and 97 of the Rules to allocate the frequency band 5250-5400 kHz to the Amateur Radio Service on a secondary basis. In ET Docket 02-98, the Commission solicits comments as to whether this band should contain emission subbands, to be prescribed by the Commission, as well as comments on power limits and accessibility of this band to holders of the various classes of amateur radio operator licenses. These Reply Comments will address some of the points made in Dunn's comments.

2. Emission Subbands

In his comments, Dunn proposes that the Commission impose emission subbands on the proposed 5250-5400 kHz allocation: *"In the case of the 5.25 to 5.4 MHz band, I would ask that the lower end, 5.25 to 5.3 MHz be allocated to weak signal and CW emissions to allow further use of the unique propagation available, with SSB phone and digital users above."* This is a classic call for yet more regulation in a hobbyist radio service that is already grossly overregulated. The United States is the only country whose government still mandates emission subbands in its amateur radio service. Such dictation of emission subbands by government fiat fails to take into account changes in operating preferences. It results in the inefficient use of precious spectrum. And it creates de facto "American-free" zones on our bands, as amateur stations in other countries may use voice emissions anywhere in any of the amateur HF allocations (except 10.100-10.150 MHz, which is reserved for narrowband, non-voice modes in most countries). Those foreign stations will not communicate with U.S. stations using CW (Class A1A emission) or other nonvoice modes in those subbands. Because such band segments are widely occupied by foreign voice stations, U.S. stations avoid using CW and other nonvoice modes there. Such de facto "American-free" zones include the segments 3700-3750 kHz, 7075-7150 kHz (primarily at night; the U.S. voice allocation from 7150 to 7300 kHz is often useless at night due to interference from high-power international broadcast stations), 14.100 to 14.150 MHz, and 21.100 to 21.200 MHz. This is valuable spectrum that Americans should be able to use in the same way that amateur radio operators may use it in other countries, including Canada. Canada recently abolished the allocation of emission subbands by government fiat.

3. Voice Transmission and Bandwidth Limitations

In the fourth paragraph of his comments on the above docket, Dunn writes, *"Use of AM (double sideband with carrier) should be limited or not allowed due to the wideband nature of those signals and seemingly concurent* (sic) *spatter* (sic) *and spurious emissions."* In this statement, Dunn seems to exhibit a profound ignorance of basic transmitter theory. A properly operating AM transmitter will neither emit splatter nor other spurious emissions. Proper neutralization of RF power amplifier stages will prevent parasitic oscillation. "Splatter" (spurious sidebands) can occur with any type of amplitude modulated emission, including A3E (double sideband with full carrier), H3E (single sideband with full carrier), J3E (single sideband with suppressed carrier), and R3E (single sideband with reduced carrier). It results from overmodulation, which causes carrier pinch-off and negative peak clipping in the case of A3E and H3E emission and general peak clipping ("flat-topping") in J3E emission. "Flat-topping" is caused by driving a linear RF amplifier stage into saturation.

Dunn further states, *"AM has outlived its usefulness and I belive* (sic)*, has no place on today's crowed* (sic) *phone bands."* There is a sizable number of amateur radio operators who enjoy using AM (A3E/H3E). Many still build and repair their own radio equipment. Some have even built transmitters using the latest solid state techniques, such as Class E RF power amplifiers and the conversion of pulse duration modulation to amplitude modulation. This seems to be more in keeping with Section 97.1 (d) of the Commission's Rules than is the purchase and operation of an imported SSB/CW transceiver.[1] Dunn appears to favor CW telegraphy (Class A1A emission) in his comments, as he calls for a subband to be reserved for this type of emission, yet the Amateur Radio Service is the only one still using A1A emission on a regular basis in this country. Could it be that CW (A1A emission) has also outlived its usefulness? In the fifth paragraph of his comments, Dunn identifies himself as an active member of the Army MARS (Military Affiliate Radio Service) program. It is significant to note that the Department of Defense terminated the use of CW (A1A) emission in all three MARS services effective October 1, 1996. Why, then, should the Commission's Rules grant CW (A1A emission) a special preserve on the proposed 5250-5400 kHz band or on any other amateur radio frequency band?

In the fourth paragraph of his comments, Dunn further states, *"Or, as a compromise, enforce some sort of bandwidth limitation that would require a total signal width equal to that of a properly adjusted Single Sideband transmision* (sic)*, as was done in the past with Narrow Band FM. A 3 kHz total bandwidth standard could be effective…"*. This matter was examined and rejected by the Commission in Docket 20777. Such emission and bandwidth restrictions would serve only to hobble experimentation in the Amateur Radio Service, as new emission modes such as OFDM[2] digital transmission often occupy a channel wider than 3 kHz. A group of radio amateurs in Great Britain, a country that does not hobble its amateur radio service with excessive technical regulations, is currently experimenting with the transmission of voice using OFDM on the HF bands. Current bandwidth limitations prescribed in Section 97.307 (f) (3)[3] expressly prohibit experimentation with new emission modes, as do the limitations prescribed in Section 97.309 (a)[4]. This also conflicts with the aim of Section 97.1 (b) and (c)[5], as amateur radio operators wishing to use new emission modes on the air must apply for Special Temporary Authorization from the Commission. It is certainly an embarrassment to the Amateur Radio Service in this country that we are limited to transmitting text at 300 baud over the air while teenagers may digitally transmit text, voice, and images over the Internet at much higher speeds. A good alternative would be to avoid prescribing bandwidth and emission subband restrictions on 5250-5400 kHz or any other new amateur frequency allocation and to delete most of the existing restrictions in Sections 97.305, 97.307, and 97.309 of the Commission's Rules, substituting the broad provisions of Part 5 of the Commission's Rules (Experimental Radio Service).

The AM operations decried by Dunn voluntarily limit themselves to spot frequencies and narrow segments of the 1800-2000 kHz, 3500-4000 kHz, 7000-7300 kHz, 21.00-21.45 MHz, and 28.0-29.7 MHz bands, with *one* spot frequency (14.286 MHz) used for AM on the 20 meter band. The crowding of the voice subbands seems to be due to inefficient allocation of amateur frequencies caused by government-mandated subbanding, rather than the relatively small number of AM stations on these bands. On the 1800-2000 kHz band, which does not currently have government-mandated emission subbands, most of the intermodal interference occurs during contest weekends, when operators participating in the contest spread all over the band, disregarding the voluntary bandplans that have been in place since LORAN-A transmissions ceased in this band in 1980. None of this justifies the banning of AM (A3E) or any other type of emission on any amateur band.

4. Power Limitations

In the third paragraph of his comments, Dunn proposes, *"I would like to see a 200 watt power limit applied to ALL modes across the new band."* If amateur radio stations can operate on 5250-5400 kHz without causing harmful interference to primary users of this band, there is absolutely no reason why such a power restriction should be applied. Under certain propagation conditions, the full 1500 watts PEP of transmitter power prescribed in Section 97.313 (b)[6] are needed for effective communications. Section 97.313 (a)[7] further prescribes that an amateur station must use the *minimum* transmitter power necessary to carry out the desired communications. Dunn's proposal is therefore redundant and totally unnecessary.

5. Operator License Classes

In the last paragraph of his comments, Dunn states, *"Perhaps access to the new band could be limited to General Class and above, providing a bit of incentive for new licensees to upgrade and learn more about our great hobby."* Although I concur with Dunn that the 5250-5400 kHz band should be available to General Class and higher, Dunn's argument seems to be superfluous. The only license class available to new licensees that ranks below General Class is the Technician Class license. In its present form, this license does not permit operation on any band below 50 MHz, so the same incentive for upgrading provided by the other amateur HF allocations would exist here. I would like to add that the entire 5250-5400 kHz band should be made available to General Class licensees and above, with no license class subbands.

Respectfully submitted,

Philip E. Galasso

Amateur Radio Station K2PG

131 Stafford Forge Road

West Creek, NJ 08092-9329

These Reply Comments have been mailed to Mr. Dunn, as prescribed in Part 1 of the Commission's Rules.

[1] Section 97.1 (d) states a basis and purpose of the Amateur Radio Service as, "Expansion of the existing reservoir within the amateur radio service of trained operators, technicians, and electronics experts."

[2] Orthogonal Frequency Division Multiplexing, a multicarrier digital modulation scheme developed by Bell Laboratories. It is currently used in various forms for the transmission of voice, digital television (Europe), and data.

[3] 97.307 (f) (3) states, "Only a RTTY or data emission using a specified digital code listed in 97.309 (a) of this Part may be transmitted. The symbol rate must not exceed 300 bauds, or for frequency-shift keying, the frequency shift between mark and space must not exceed 1 kHz."

[4] 97.309 (a) states, "Where authorized by Section 97.305 (c) and 97.307 (f) of this Part, an amateur station may transmit a RTTY or data emission using the following specified digital codes:

(1) The 5-unit, start-stop, International Telegraph Alphabet No. 2, code defined in International Telegraph and Telephone Consultative Committee Recommendation F.1, Division C (commonly known as Baudot).

(2) The 7-unit code, specified in International Radio Consultative Committee Recommendation CCIR 476-2 (1978), 476-3 (1982), 476-4 (1986), or 625 (1986) (commonly known as AMTOR).

(3) The 7-unit code defined in American National Standards Institute X3.4-1977 or International Alphabet No. 5 defined in International Telegraph and Telephone Consultative Committee Recommendation T.50 or in International Organization for Standardization, International Standard ISO 646 (1983), and extensions as provided for in CCITT Recommendation T.61 (Malaga-Torremolinos, 1984) (commonly known as ASCII).

[5] Section 97.1 (b) states, "Continuation and extension of the amateur's proven ability to contribute to the advancement of the radio art." Section 97.1 (c) states, "Encouragement and improvement of the amateur service *through rules which provide for advancing skills in both the communications and technical phases of the art."* (Italics added)

[6] 97.313 (b): No station may transmit with a transmitter power exceeding 1.5 kW PEP.

[7] Section 97.313 (a): An amateur station must use the *minimum* transmitter power necessary to carry out the desired communications. (Italics supplied)